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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,253	07/23/2002	Nikolay Nikolaevich Guletsky	COLB 203	1774
24972	7590	10/10/2003	EXAMINER	
FULBRIGHT & JAWORSKI, LLP			CURTIS, CRAIG	
666 FIFTH AVE			ART UNIT	
NEW YORK, NY 10103-3198			PAPER NUMBER	

2872

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/069,253

Applicant(s)

GULETSKY ET AL.

Examiner

Craig H. Curtis

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 20 February 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3, 5 & 9.                      6) ☐ Other: \_\_\_\_\_

Art Unit: 2872

## DETAILED ACTION

### *Disposition of the Application*

- This Office action is responsive to Applicants' Preliminary Amendment A filed on 20 February 2002 and made of record in the file as Paper No. 8.
- By this amendment, Applicants have cancelled without prejudice claims 1-8 and have newly added claims 9-16.
- Receipt of foreign priority documents submitted under 35 U.S.C. §119 (a-d) is hereby acknowledged, which documents have been placed of record in the file as Paper No. 2.
- Claims 9-16 currently are pending in the instant application.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- 1. Claims 9-16 are rejected under 35 U.S.C. §112, first paragraph, as based on a disclosure which is not enabling; more specifically, said method critical or essential to the practice of the invention, but not included in the claims, is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).** Initially, it is noted that no logical relationship has been established in these claims between the developing &

Art Unit: 2872

computing steps (both of which are purely mathematical/computational in nature) and said focusing step (which is physically realizable in nature). Moreover, even if such a relationship between said method steps had in fact been recited in these claims, said method still would not yield a hologram of an object, inasmuch as holograms, by their very nature, arise from the interference between at least one object beam and at least one reference beam. What is perhaps most puzzling, however, is how light can be scattered from a three-dimensional set of points that is, after all, merely a mathematical construct (as opposed to, for the sake of example, an actual three-dimensional set of points--i.e., a lattice of actual points--such points, of course, being distinguishable from mathematical points, which, by definition, are dimensionless and thus incapable of scattering light). This issue also arises with regard to the manner in which a laser beam can be focused onto each of said points (*read*: mathematical points) within a solid transparent material. And finally, in addition to the above-recited inconsistencies, it is noted that the limitation "...focusing a pulsed laser beam into said solid transparent material onto each of said points *sequentially*,...(emphasis added)" is misdescriptive, inasmuch as the recordation of holograms is not accomplished in such a localized and sequential manner but, rather, in a more gross and generalized fashion.

Art Unit: 2872

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**2. Claims 9-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Troitski et al. (6,087,617).**

Troitski et al. disclose the invention as claimed--a method (by implication from structural teachings of system) of producing in a solid transparent material, a hologram of an object, comprising, inter alia, the steps of:

developing a three-dimensional mathematical model of an electro-magnetic [read: electromagnetic] field emanating from said object, said field producing an image of said object (see, e.g., col. 4, ll. 38-42);

computing a corresponding three-dimensional set of points; and

focusing a pulsed laser beam (from laser 16) into a solid transparent material, said beam being capable, when focused, of causing optical breakdown damage in said solid transparent material (see col. 3, ll. 65-67--col. 4, ll. 1-7)-- **EXCEPT FOR** explicit disclosure of the following additionally recited limitations:

wherein light scattered from said a corresponding computed three-dimensional set of points reconstructs said field (a physical impossibility in any event), and wherein said pulsed laser beam focused into said transparent material focuses onto each of said points sequentially (again, a physical impossibility).

Art Unit: 2872

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have implemented the above-recited additional method steps during the implementation of said system of Troitski et al., for at least the purpose of establishing that a real, not a computed, three-dimensional set of points would be needed in order to reconstruct a given field distribution, and that only such a real three-dimensional set of points, not a computed set, could in any way be relied upon to focus said pulsed laser beam into said transparent material to accomplish same (in, incidentally, as set forth in more detail above, a non-sequential manner) in the manner currently set forth in the claims.

Art Unit: 2872

*Contact Information*

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig Curtis, whose telephone number is (703) 305-0776. The facsimile phone number for Art Unit 2872 is (703) 308-7722.

Any inquiry of a general nature regarding the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.

A handwritten signature in black ink, appearing to read 'Audrey Chang', with a large, sweeping loop at the beginning and a smaller, more complex loop at the end.

**Audrey Chang  
Primary Examiner  
Technology Center 2800**

*C.H.C.*

Craig H. Curtis  
Group Art Unit 2872  
24 September 2003